इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 1438 (1960): Crane Weighing Machines [PGD 26: Weights and Measures]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 1438 - 1960

(Reaffirmed 2003)

Indian Standard

SPECIFICATION FOR CRANE WEIGHING MACHINES

(Fourth Reprint JULY 1991)

UDC 681·266

Commercial Weights and Measures Sectional Committee, EDC 41

Chairman	
SHRI V. V. APTE	Directorate of Industries, Government of Bombay
Members	
SHRI GAYA PRASAD AGRAWAL	Ram Krishna Iron Foundry, Agra
SHRI B. S. D. AIYAR	India Government Mint (Ministry of Finance)
SHRI B. M. MISTRY (*Alternate*)	
SHRI R. R. CHAKRAVARTY	National Instruments (Private) Ltd , Calcutta
SHRI B. R. DHURANDHAR	Saple's Scale Manufacturing Co Private Ltd , Bombay
SHRI KRISHNA KUMAR NAROTTAMDAS GHIA	Bombay Bullion Association, Bombay
SHRI VENILAL THAKORLAL SHETH (*Alternate*)	
SHRI H. C. GHULATI	Directorate General of Supplies & Disposals (Ministry of Works, Housing & Supply)
SHRI K. N. SHRIVASTAWA (*Alternate*)	
SHRI R. S. GUPTA	The Technical Corporation Private Ltd , Lucknow
SHRI P. N. KAUL (*Alternate*)	
SHRI S. L. KUMAR	Ministry of Railways
SHRI R. KRISHNAMURTI (*Alternate*)	
SHRI E. LAKSHMIPATHI	The Andhra Scientific Co Ltd , Masulipatam
SHRI A. K. MULLICK	Directorate of Posts & Telegraphs (Ministry of Transport & Communications), New Delhi
SHRI N. CHIDAMBARAM (*Alternate*)	
SHRI P. N. NAYER	Standing Metric Committee, Ministry of Commerce & Industry
SHRI V. B. MAINKAR (*Alternate*)	
SHRI K. SRINIVASA RAO (*Alternate*)	
SHRI PREM PRAKASH	National Physical Laboratory (CSIR)
SHRI E. R. QUINCE	The Avery Co of India Private Ltd , Calcutta
LT-COL D. S. ROY	Controller General of Defence Production (Ministry of Defence)
DR N. K. GOPALAN (*Alternate*)	
SHRI A. A. SALETORE	Federation of Indian Chambers of Commerce & Industry, New Delhi
SHRI K. S. G. HAJA SHAREEFF	Southern India Chamber of Commerce, Madras
SHRI B. K. THAKOOR	The Oriental Metal Pressing Works Private Ltd , Bombay
SHRI G. D. THAKOOR (*Alternate*)	
SHRI T. J. VARKIE	Burmah-Shell Oil Storage & Distributing Co of India Ltd , Bombay
SHRI B. L. DHAR (*Alternate*)	
DR LAL C. VERMAN (*Ex-officio*)	Director, ISI
Secretary	
SHRI M. V. PATANKAR	Assistant Director (Eng), ISI

Panel for Platform Weighing Machines, Weigh-Bridges, Dead Weight Machines, Automatic Weighing Machines and Crane Weighing Machines, EDC 41 : P2

Convener	
SHRI E. R. QUINCE	The Avery Co of India Private Ltd , Calcutta
Members	
SHRI J. C. FRANKLIN	Licensed Measures Department, Bengal Chamber of Commerce & Industry, Calcutta
SHRI N. C. MUKHERJEE	The India Machinery Co Ltd , Calcutta
SHRI NIRMAL SINGH	Railway Board
SHRI V. M. PEDNEKAR	Weights & Measures Department, Government of Bombay

---

© *Copyright* 1960

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

May 1960

Indian Standard
SPECIFICATION FOR CRANE WEIGHING MACHINES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 5 March 1960, after the draft finalized by the Commercial Weights and Measures Sectional Committee had been approved by the Engineering Division Council.

0.2 This standard is one of a series of Indian Standards on commercial weighing instruments being prepared at the instance of the Standing Metric Committee, Government of India, in connection with the introduction of metric system of weights and measures in the country. Other standards in the series are:

IS : 1432-1959 General Requirements for Weighing Instruments
*IS : 1433-1960 Specification for Beam Scales
IS : 1434-1959 Specification for Counter Machines
IS : 1435-1960 Specification for Platform Weighing Machines
IS : 1436-1960 Specification for Weigh-Bridges
IS : 1437-1967 Specification for Automatic Weighing Machines
IS : 1439-1959 Specification for Steel-yards

0.2.1 An Indian Standard Specification on spring balances is under preparation.

0.3 In determining the limits for sensitiveness and greatest error, due consideration was given to the views of manufacturers and testing organizations, prevalent rules and regulations pertaining to weights and measures in India and the practices current in several metric countries. It is to be pointed out that the values for sensitiveness and greatest error specified in this standard (*see* Tables I and II) are for new machines only.

0.4 The Indian Standard General Requirements for Weighing Instruments (IS : 1432-1959) is a necessary adjunct to this standard.

0.4.1 Wherever a reference to any Indian Standard mentioned in **0.4** or otherwise appears in this standard, it shall be taken as a reference to its latest version.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value(s), observed or calculated, expressing the result(s) of a test shall be rounded off in accordance with *IS : 2-1949 Rules for Rounding Off Numerical Values. The number of significant places retained in the rounded off value(s) should be the same as that of the specified value(s) in this standard.

0.6 This standard is intended chiefly to cover the technical provisions relating to crane weighing machines, and it does not include all the necessary provisions of a contract.

---

*Since revised.

*Since revised.

1. SCOPE

1.1 This standard covers the requirements for crane weighing machines.

2. TERMINOLOGY

2.1 For the purpose of this standard a crane weighing machine shall mean a weighing instrument designed on lever or spring principle specially constructed for suspension from the hook of a crane and fitted with a hook for lifting the load.

Note — A lever type machine with open steelyard is illustrated in Fig. 1; Fig. 2 illustrates a dial type machine.

3. CAPACITIES

3.1 Crane weighing machines shall be of the following capacities:

500 kg, 1 tonne, 2 tonnes, 3 tonnes, 5 tonnes, 10 tonnes, 15 tonnes, 20 tonnes, 30 tonnes, 50 tonnes, 100 tonnes, and 200 tonnes.

4. GENERAL REQUIREMENTS

4.1 The weighing machines shall comply with the general requirements specified in IS : 1432-1959.

4.2 In addition, the weighing machines shall comply with the following requirements.

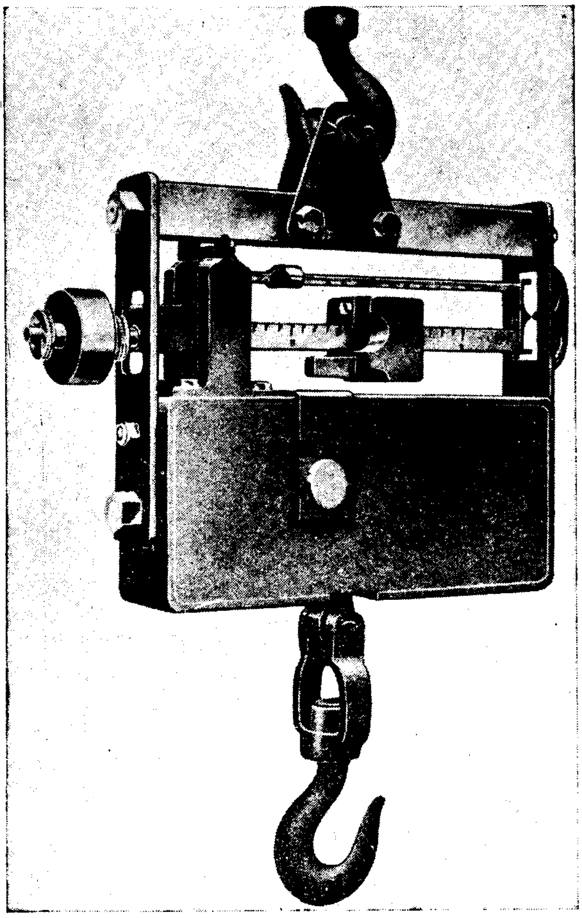

FIG. 1 CRANE WEIGHING MACHINE, STEELYARD TYPE

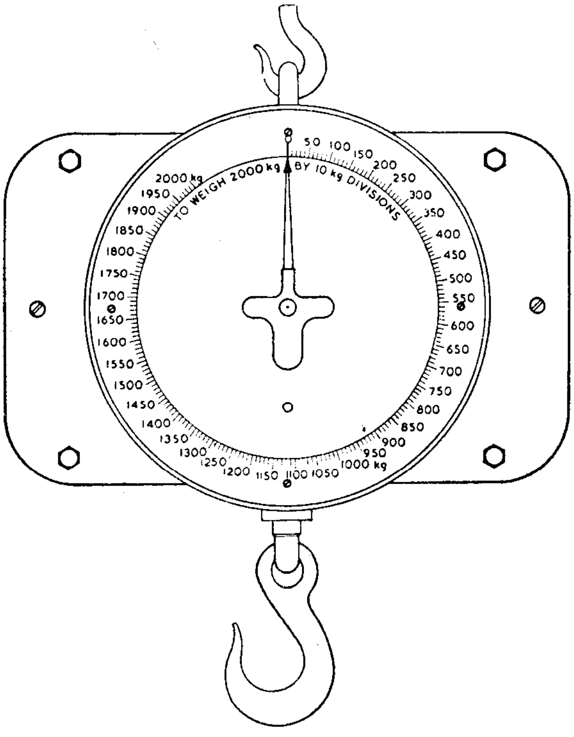

FIG. 2 CRANE WEIGHING MACHINE, DIAL TYPE

4.2.1 The machine shall be sufficiently strong to withstand wear and tear in the exacting conditions under which it works.

4.2.2 No crane weighing machine shall become a permanent link in the lifting gear.

4.2.3 All working parts in a crane weighing machine shall, as far as possible, be suitably protected from the dust and damp of the atmosphere. In a lever type machine, the steelyard shall be made of corrosion-resistant steel to withstand atmospheric influence and shall be sufficiently rigid and accurate.

4.2.4 In dial type machines, the racks and pinions shall be of suitable hard wearing material and finished smooth.

4.2.5 The range of balancing or adjusting arrangement shall not exceed 2 percent of the capacity of the machine.

4.2.6 In a steelyard type machine, there shall be free movement of the steelyard. In a dial type machine, the dial indicator shall work freely and return to its initial starting point after the load is removed.

4.2.7 In the case of a crane weighing machine provided with hooks, trays or slings, these shall form essential parts without which it is not possible to balance the machine. These shall be identified with the machine.

4.2.8 The value of the smallest graduation on dials or minor steelyards and, wherever possible, major steelyards shall be such that it corresponds to one of the weights in the series 1, 2, 5 or its decimal multiples.

Example:

The value of the smallest graduation in the 1, 2, 5 series would, therefore, correspond to one of the weights in the series, say, 1 g, 2 g, 5 g, 10 g, 20 g, 50 g, 100 g, 200 g, 500 g, 1 kg, 2 kg, 5 kg, etc, depending upon the requirements of the weighing instrument.

5. TESTS

5.1 Crane machines of the steelyard type shall be tested for sensitiveness and greatest error at full load and shall comply with the requirements of Table I.

5.2 Crane machines of the dial type shall be tested for greatest error at full load and shall comply with the requirements of Table II.

5.3 Spring type crane machines shall not be tested for sensitiveness.

5.4 For spring type machines, the limits of greatest error shall be double of those prescribed for steelyard machines (*see* Table I).

5.5 Each numbered graduation shall be tested and the instrument shall be correct whether the

TABLE I LIMITS FOR SENSITIVENESS AND GREATEST ERROR FOR CRANE WEIGHING MACHINES (STEELYARD TYPE)

(*Clauses* 0.3, 5.1 *and* 5.4)

Capacity	Sensitiveness when Fully Loaded	Greatest Error Allowed in Excess or Deficiency when Fully Loaded
500 kg	100 g	200 g
1 tonne	1·1 kg	1·2 kg
2 tonnes	1·2 ,,	1·4 ,,
3 ,,	1·3 ,,	1·6 ,,
5 ,,	1·5 ,,	2·0 ,,
10 ,,	2·0 ,,	3·0 ,,
15 ,,	2·5 ,,	4·0 ,,
20 ,,	3·0 ,,	5·0 ,,
30 ,,	4·0 ,,	7·0 ,,
50 ,,	5·25 ,,	7·75 ,,
100 ,,	6·5 ,,	11·5 ,,
200 ,,	9·0 ,,	19·0 ,,

test is carried out with increasing or decreasing loads.

5.6 The intermediate graduations shall also be tested to see that they are correct and are at proper distance apart.

5.7 No test for sensitiveness at a load lower than the full load shall be made.

6. SEALING

6.1 Crane machines shall be fitted with an irremovable plug in a conspicuous part, either on the steelyard or on the dial, to receive the seal of the verification authority.

TABLE II LIMITS FOR GREATEST ERROR FOR CRANE WEIGHING MACHINES (DIAL TYPE)

(*Clauses* 0.3 *and* 5.2)

Capacity	Maximum Weight Corresponding to Interval Between Successive Graduations kg	Greatest Error Allowed in Excess or Deficiency when Fully Loaded
500 kg	5	A weight corresponding to one half the interval between successive graduations
1 tonne	5	
2 tonnes	5	
3 ,,	10	
5 ,,	25	
10 ,,	50	
15 ,,	50	
20 ,,	100	
30 ,,	100	
50 ,,	250	
100 ,,	500	
200 ,,	500	